CHARLES UNIVERSITY IN PRAGUE
Faculty of Pharmacy in Hradec Králové
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Bioadhesion testing of spray applicated solutions of branched oligoesters
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ABSTRACT

The aim of this diploma thesis was the study of the adhesive properties of two oligoesters of lactic acid and glycolic acid branched with mannitol. Knowledge of bioadhesion, mechanism of bioadhesion, properties of bioadhesion material and method of bioadhesion testing are summarized in theoretical part. In the experimental part N-methylpyrrolidon was chosen as solvent of the oligoesters to obtain solutions with a suitable viscosity for spray application. The viscosity was determined with a capillary viscometer. Test of adhesivity was performed by so-called "wash off" technique. Adhesiveness was studied as residence time of 20% solution of oligoester in N-methylpyrrolidon on a model substrate consisting of hydrated mucin from porcine stomachs. Sudan III was chosen as suitable dye, its release during the dissolution test was an indicator of the amount of oligoester adhered on the substrate. The quantitative determination was realized by spectrophotometry. The time of adhesion of oligoester 8M on mucin substrate was 75 minutes, while the oligoester 3M adhered on the mucin longer and equally over 120 minutes.

Key words: branched oligoesters, adhesion, adhesive tests, viscosity.